May 1, 2007

Air Quality Program Office - Application Processing
Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706-1255

RE: Request for Facility Emission Cap

Dear DEQ Permit Writer:

JBR Environmental Consultants, Inc. is submitting on behalf of Hoku Scientific, Inc. a PTC application for construction and operation of a new polysilicon manufacturing facility. In accordance with IDAPA 58.01.01.176.01, Hoku requests a Facility Emissions Cap.

In accordance with the June 9, 2005 FEC white paper by the Workgroup Steering Committee, the following information must be provided:

(1) A proposed FEC and the basis for its calculation;
(2) Estimates of ambient concentrations; and
(3) Proposed monitoring and recordkeeping requirements.

These items are addressed in more detail below:

(1) A proposed FEC and the basis for its calculation

The proposed FEC limits are the potential to emit emission estimates included in the enclosed DEQ forms. The bases for the calculations are primarily engineering evaluations from existing sources, baghouse grain loadings, control efficiencies for process emissions, and AP-42 for combustion emissions. These emissions are the potential to emit that the facility will not exceed without any plant modification.

(2) Estimates of ambient concentrations

The ambient concentrations estimated with this application are expected to be worst case. Precise locations of some equipment and exact stack parameters are not known at this time but Hoku has submitted their best understanding of worst case stack and location characteristics in this application. Upon final determination of the equipment locations and stack characteristics, Hoku will prepare an “as-built” modeling report if necessary to ensure worst-case impacts under the permit are shown to not exceed any ambient air quality impact limits.

Throughout the term of the FEC permit, Hoku will maintain modeling demonstrations as necessary showing that permitted activities will not threaten any ambient air quality standards. The modeling reports will be prepared and maintained consistent with Idaho DEQ and FEC requirements.

(3) Proposed monitoring and recordkeeping requirements

According to the white paper the applicant must also identify proposed means for monitoring compliance with the FEC on a rolling 12 month consecutive basis. Monitoring methods can include continuous emissions monitors, material balance calculations, emissions calculations, and using approved emission factors and process information, alternative production or process limits, or other approved methods. Recordkeeping requirements must include proposed means to identify and track facility changes that increase emissions, such as the relocation of emission units or addition of new emission units. The applicant must also identify means to record the impact of the facility changes.

a. Boiler

Proposed monitoring: Natural gas fuel consumption will be monitored continuously. On a monthly basis the fuel consumption and AP-42 emission factors, as enclosed with this application, will be used to determine monthly emissions and annual rolling 12-month emissions.

Proposed recordkeeping: Fuel consumption records and corresponding emission estimates will be kept onsite for a minimum of five years.

Proposed recordkeeping of impact: If the boiler is modified or has changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

b. Hot Oil Heater

Proposed monitoring: Natural gas fuel consumption will be monitored continuously. On a monthly basis the fuel consumption and AP-42 emission factors, as enclosed with this application, will be used to determine monthly emissions and annual rolling 12-month emissions.

Proposed recordkeeping: Fuel consumption records and corresponding emission estimates will be kept onsite for a minimum of five years.

Proposed recordkeeping of impact: If the heater is modified or has changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

c. M.G. Silicon Bin Vent; M.G. Silicon Primary Hopper; M.G. Silicon Secondary Hopper

Proposed monitoring: Hours of operation will be monitored and recorded. On a monthly basis emissions will be calculated based on an emission factor of 0.02 grains/dscf. Manufacturers'

guarantees will be provided to DEQ when final baghouse design is determined, at least seven days prior to baghouse installation.

Proposed recordkeeping: Records for hours of operation to be kept onsite for a minimum of five years. Corresponding monthly and rolling 12-month emission estimates will be kept onsite also.

Proposed recordkeeping of impact: If any of these process equipment are modified or have changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

d. Lime Storage Silo

Proposed monitoring: Hours of operation will be monitored and recorded. On a monthly basis emissions will be calculated based on emission factor of 0.02 grains/dscf. Manufacturers' guarantees will be provided to DEQ when final baghouse design is determined.

Proposed recordkeeping: Records for hours of operation will be kept onsite for a minimum of five years. Corresponding monthly and rolling 12-month emission estimates will be kept onsite also.

Proposed recordkeeping of impact: If the silo is modified or have changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

e. Cooling Tower

Proposed monitoring: Hours of operation will be monitored and recorded. On a monthly basis the TDS will be measured and emissions will be calculated based on the methodology presented in this application.

Proposed recordkeeping: Records for hours of operation to be kept onsite for a minimum of five years. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

Proposed recordkeeping of impact: If the cooling tower is modified or has changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

f. Emergency Generator and Fire Water Pump

Proposed monitoring: The hours of operation and consumption of diesel fuel will be recorded and it is assumed that the equipment runs at maximum horsepower. Emission will be estimated based on the AP-42 emission factors included with this application.

Proposed recordkeeping: Fuel consumption records will be kept onsite for a minimum of five years. Corresponding monthly and rolling 12-month emission estimates will be kept onsite also.

Proposed recordkeeping of impact: If the generator or fire pump are modified or have changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

g. Laboratory Venting System, Chlorosilane Venting System, and Relief Vent System

Proposed monitoring: Parametric monitoring is proposed to determine the emissions for PM/PM-10, HCl, HNO_3, and HF. Hoku proposes to measure scrubber flow rate and pressure drop and use those values, combined with manufacturer's emission guarantees based on those parameters, to estimate emissions. Hoku proposes to provide the protocol for parametric measurement of these emissions at least 30 days prior to the scrubber start-up. During operations emissions will be calculated on a monthly basis based on parametric monitoring results.

Proposed recordkeeping: Records for scrubber flow rate and pressure drop, and corresponding emission estimates, will be kept onsite for a minimum of five years. Corresponding monthly and rolling 12-month emission estimates will be kept onsite also.

Proposed recordkeeping of impact: If any of the scrubbers are modified or have changed locations modeling will be performed at least seven days prior to the modification. Modeling will be performed using DEQ guidelines, and the report will be made available for DEQ review.

h. Fugitive Emissions from Valves, Fittings, and Cleaning

Proposed monitoring: Hoku intends to use Bellows seals in as many applications as possible; these seals prevent emissions from being discharged. However, this may be expensive or impractical in some applications. When other types of seals are used, Hoku proposes to inspect seals on a routine basis as part of normal operations. In addition Hoku will formally inspect all seals on an annual basis. If leaking is observed then maintenance will be performed on the seals. These methods of monitoring HCl are preferred as there are no cost effective monitoring analyzers for the small amount of HCl emissions expected.

For VOC emissions from cleaning material, VOC emissions will be determined based on MSDSs, the amount of cleaning material used, and the VOC content. It is assumed that all VOCs will be emitted.

Proposed recordkeeping: The annual inspection report for vales and fittings will be kept on site for a minimum of five years. All maintenance performed will also be kept onsite for a minimum of five years.

MSDSs will be kept on site for cleaning materials, as well as VOC estimates.

Proposed recordkeeping of impact: If valves and fittings are modified compared to original design then HCl emissions will be evaluated against the IDAPA 58.01.01.585 AAC. VOC emissions are not required to be modeled.

Please note that no new emission units are requested at this time for the FEC. Please feel free to contact myself at 208.853.0883 if you have any questions or need additional information.

Sincerely,

Daniel Heiser, P.E.
JBR Environmental Consultants, Inc.

cc: Karl Taft, Hoku Scientific
Glen Stucki, VECO

Enclosure: PTC Application Fee
PTC Application Forms
PTC Modeling Report
Electronic Modeling Files